CLAIMS

What is claimed is:

1. An isolated nucleic acid molecule consisting of a nucleic acid sequence selected from the group consisting of:

a) SEQ ID NO: 1;

b) the complement of SEQ ID NO: 1;

c) SEQ ID NO: 3;

d) the complement of SEQ ID NO: 3;

e) a portion of SEQ ID NO: 1 which is at least 500 nucleotides in length;

f) a portion of the complement of SEQ ID NO: 1 which is at least 500 nucleotides in length;

g) a portion of SEQ ID NO: 3 which is at least 35 nucleotides in length;

h) a portion of the complement of SEQ ID NO: 3 which is at least 35 nucleotides in length;

i) a nucleic acid sequence that encodes SEQ ID NO: 2; and

j) a nucleic acid sequence that encodes SEQ ID NO: 4.

2. An isolated nucleic acid molecule according to Claim 1 which is DNA.

3. An isolated nucleic acid molecule according to Claim 1 which is RNA.

4. An isolated nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of:

a) SEQ ID NO: 3;

b) the complement of SEQ ID NO: 3;

c) a portion of SEQ ID NO: 3 which is at least 35 nucleotides in length;

d) a portion of the complement of SEQ ID NO: 3 which is at least 35 nucleotides in length;

e) a nucleic acid sequence that encodes SEQ ID NO: 2; and

f) a nucleic acid sequence that encodes SEQ ID NO: 4.

5. An isolated nucleic acid molecule according to Claim 4 which is DNA.

6. An isolated nucleic acid molecule according to Claim 4 which is RNA.

7. An isolated nucleic acid molecule comprising a nucleic acid sequence that hybridizes under high stringency to a nucleic acid sequence selected from the group consisting of:

a) SEQ ID NO: 1;

b) the complement of SEQ ID NO: 1;

c) SEQ ID NO: 3;

d) the complement of SEQ ID NO: 3;

e) a portion of SEQ ID NO: 1 which is at least 500 nucleotides in length;

f) a portion of the complement of SEQ ID NO: 1 which is at least 500 nucleotides in length;

g) a portion of SEQ ID NO: 3 which is at least 35 nucleotides in length;

h) a portion of the complement of SEQ ID NO: 3 which is at least 35 nucleotides in length;

i) a nucleic acid sequence that encodes SEQ ID NO: 2; and

j) a nucleic acid sequence that encodes SEQ ID NO: 4.

8. A probe comprising a nucleic acid sequence that hybridizes under high stringency conditions to a nucleic acid sequence selected from the group consisting of:

a) SEQ ID NO: 1;

b) the complement of SEQ ID NO: 1;

c) SEQ ID NO: 3;

d) the complement of SEQ ID NO: 3;

e) a portion of SEQ ID NO: 1 which is at least 500 nucleotides in length;

f) a portion of the complement of SEQ ID NO: 1 which is at least 500 nucleotides in length;

g) a portion of SEQ ID NO: 3 which is at least 35 nucleotides in length;

h) a portion of the complement of SEQ ID NO: 3 which is at least 35 nucleotides in length;

i) a nucleic acid sequence that encodes SEQ ID NO: 2; and

j) a nucleic acid sequence that encodes SEQ ID NO: 4.

9. An isolated polypeptide, or functional portion thereof, comprising an amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3.

10. A vector or plasmid comprising a nucleic acid sequence selected from the group consisting of:

a) SEQ ID NO: 1;

b) the complement of SEQ ID NO: 1;

c) SEQ ID NO: 3;

d) the complement of SEQ ID NO: 3;

e) a portion of SEQ ID NO: 1 which is at least 500 nucleotides in length;

f) a portion of the complement of SEQ ID NO: 1 which is at least 500 nucleotides in length;

g) a portion of SEQ ID NO: 3 which is at least 35 nucleotides in length;

h) a portion of the complement of SEQ ID NO: 3 which is at least 35 nucleotides in length;

i) a nucleic acid sequence that encodes SEQ ID NO: 2; and

j) a nucleic acid sequence that encodes SEQ ID NO: 4.

11. The vector or plasmid of Claim 10 wherein the isolated nucleic acid sequence is operatively linked to a regulatory sequence.

12. A recombinant host cell comprising the vector or plasmid of Claim 11.

13. A method for preparing a polypeptide encoded by an isolated nucleic acid sequence, comprising culturing the recombinant host cell of Claim 12.

14. A fusion protein comprising the amino acid sequence of an isolated polypeptide of selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3;

or functional fragment thereof.

15. An antibody or antibody fragment that binds to a portion of a polypeptide molecule having an amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3.

16. The antibody or antibody fragment of Claim 15 which is polyclonal.

17. The antibody or antibody fragment of Claim 15 which is monoclonal.

18. A method for determining the presence or absence of a polypeptide comprising an amino acid sequence of SEQ ID NO: 2, or portion thereof, in a sample comprising:

a) obtaining the sample to be tested;

b) contacting said sample with an antibody specific to a polypeptide molecule having an amino acid sequence of SEQ ID NO: 2, or a portion thereof, to allow formation of a complex between the polypeptide and the antibody; and

c) detecting the presence or absence of complex formation.

19. A method for determining the presence or absence of a polypeptide comprising an amino acid sequence of SEQ ID NO: 4, or portion thereof, in a sample comprising:

a) obtaining the sample to be tested;

b) contacting said sample with an antibody specific to a polypeptide molecule having an amino acid sequence of SEQ ID NO: 4, or a portion thereof, to allow formation of a complex between the polypeptide and the antibody; and

c) detecting the presence or absence of complex formation.

20. A method to identify protein-interaction partners that interact with an isolated polypeptide, or functional portion thereof, comprising an amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3.

comprising contacting said polypeptide with the agent to be tested and assaying for presence or absence of complex formation between the polypeptide and agent.

21. A method to identify an agent that alters the activity of an isolated polypeptide, or functional portion thereof, comprising an amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3.

comprising contacting said polypeptide, or functional fragment thereof, with an agent to be tested, determining the level of activity of the polypeptide in the presence of the agent, and comparing said level of activity with the level of activity of the polypeptide, in the absence of the agent, wherein a statistically-significant change in activity is indicative that the agent alters the activity of the polypeptide.

22. The method according to Claim 21 wherein the activity is altered NFκB-induced expression.

23. The method according to Claim 21 wherein the agent identified is an agonist.

24. The method according to Claim 21 wherein the agent identified is an antagonist.

25. A non-human transgenic animal comprising a recombinant nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of:

a) SEQ ID NO: 1;

b) the complement of SEQ ID NO: 1;

c) SEQ ID NO: 3;

d) the complement of SEQ ID NO: 3;

e) a nucleic acid sequence that encodes SEQ ID NO: 2; and

f) a nucleic acid sequence that encodes SEQ ID NO: 4.

26. A non-human transgenic animal comprising a recombinant nucleic acid molecule encoding a polypeptide molecule having an amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3.

27. A method to identify an agent that alters the activity of a polypeptide molecule having an amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3;

comprising exposing a transgenic animal of Claim 25 to the agent to be tested and determining the level of activity of the polypeptide or functional fragment thereof, wherein increased activity indicates that the agent is an agonist, whereas decreased activity indicates that the agent is an antagonist.

28. The method according to Claim 27 wherein the activity is altered NFκB-induced expression.

29. A non-human transgenic animal comprising the deleted nucleic acid sequence of SEQ ID NO: 3, or fragment thereof.

30. A method to identify gene targets of a polypeptide comprising, determining the gene expression in a non-human transgenic animal comprising an isolated nucleic acid molecule encoding said polypeptide molecule having an amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3.

and comparing the gene expression with a non-human transgenic animal comprising a deleted nucleic acid sequence of SEQ ID NO: 4, or fragment thereof, wherein genes identified to be expressed in association with expression of said polypeptide, are potential targets of the polypeptide.

31. A method to identify gene targets of a polypeptide with amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3.

comprising determining the gene expression in a recombinant host cell containing a polypeptide with said amino acid sequence, and comparing the gene expression with a non-recombinant host cell, wherein genes identified to be expressed in association with expression of the polypeptide, are potential targets of the polypeptide.

32. A method of treating an individual having a disorder by administering a therapeutically-effective amount of an agonist of a polypeptide with amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3.

33. The method according to Claim 32 wherein the disorder is an autoimmune disease.

34. The method according to Claim 33 wherein the autoimmune disease is selected from the group consisting of, rheumatoid arthritis, diabetes mellitus and multiple sclerosis.

35. The method according to Claim 32 wherein the agent is administered orally, intravenously, intramuscularly, subcutaneously, topically, rectally, or by inhalation.

36. A method of treating an individual having a disorder by administering a therapeutically-effective amount of an antagonist of a polypeptide with amino acid sequence selected from the group consisting of:

a) SEQ ID NO: 2;

b) SEQ ID NO: 4;

c) an amino acid sequence encoded by SEQ ID NO: 1; and

d) an amino acid sequence encoded by SEQ ID NO: 3.

37. The method according to Claim 36 wherein the disorder is selected from the group consisting of cancer, malaria, tuberculosis, and HIV infection.

38. The method according to Claim 36 wherein the agent is administered orally, intravenously, intramuscularly, subcutaneously, topically, rectally, or by inhalation.